

**WORK PLAN MEMORANDUM**

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**REMI**

**PERFORMANCE OF REMEDIAL RESPONSE  
ACTIVITIES AT UNCONTROLLED  
HAZARDOUS WASTE SITES**

**U.S. EPA CONTRACT NO. 68-01-6939**

**CAMP DRESSER & MCKEE INC.  
PRIME CONTRACTOR**

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WORK PLAN MEMORANDUM  
FOR  
SOUTH CAVALCADE STREET  
HOUSTON, TEXAS  
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

January 18, 1985

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COMPANY CONFIDENTIAL

\*\*\*\*\*

This Work Plan Memorandum, prepared by the REM II Team in  
accordance with the items of USEPA Contract No. 68-01-6939  
is Company Confidential

Work Assignment No.: 47-6L56  
Document No.: 143-WP1-WM-APLD-2

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# CDM

environmental engineers, scientists,  
planners, & management consultants

January 18, 1985

CAMP DRESSER & MCKEE INC.

6060 North Central Expressway Suite 770  
Dallas, Texas 75206  
214 987-1900

Mr. Sam Nott, Regional Project Officer  
U.S. Environmental Protection Agency  
6AW-ST  
Interfirst Two Building  
Dallas, Texas 75270

Mr. John Cochran  
U.S. Environmental Protection Agency  
6AW-ST  
Interfirst Two Building  
Dallas, Texas 75270

Project: REM II - EPA Contract No. 68-01-6939/143/WP1

Document No.: 143-WP1-EP-ARMW-1

Subject: Work Plan Memorandum  
South Cavalcade Street  
Houston, Texas

Dear Mr. Nott and Mr. Cochran:

Camp Dresser & McKee Inc. (CDM) is pleased to resubmit this Work Plan Memorandum for the South Cavalcade Street site in Houston, Texas incorporating the changes you requested. There are no substantial exceptions to the scope, schedule or cost estimate provided by EPA for development of the Work Plan, with the exception that we have included for your consideration provisions for a public scoping meeting. It is our understanding, based on conversations with the EPA Region VI Community Relations Staff that the REM II Team will not develop the Community Relations Plan for the South Cavalcade Street site, but that we may be asked to assist EPA in implementing the approved plan under a separate task order. It is anticipated that details with respect to this assistance will be incorporated into the Final Work Plan for the site. Please note that the costs presented in this memorandum represent direct and indirect costs, without base fee or award fee. Detailed costs and fees will be presented in the Work Plan and will be supported by Optional Form 60's for each of the REM II Team firms participating in the work assignment.

Although CDM has performed work on this site prior to its placement on the NPL and the designated Site Manager, Dr. Robert S. Kier, was part of the CDM Team that performed the work, it has been determined that no conflict of interest exists for CDM or the Site Manager. The work in question was performed under contract to McClelland Engineers Inc. (MEI), of Houston, who were under contract to the Houston Transit Consultants (HTC), a consortium of contractors designing a light rail transit system for the Houston Metropolitan Transit Authority (MTA). Neither MEI, HTC, nor MTA have been identified as PRPs for the site. Work for one of the PRPs was performed by MEI after MTA cancelled the project and CDM's participation was terminated. Signed organizational conflict of interest statements will be submitted under separate cover.

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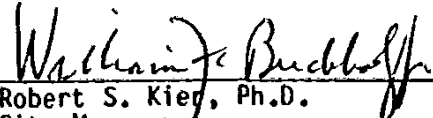
Mr. Sam Nott/Mr. John Cochran  
January 18, 1985  
Page Two

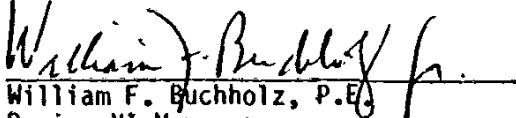
On completion of your review of this Work Plan Memorandum, we would appreciate your execution of this letter and the return of two copies to me.

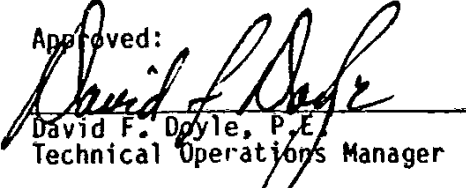
If you have any questions or comments, please do not hesitate to contact me in Austin (512-345-6651) or Mr. William F. Buchholz in our Dallas office (214-987-1900).

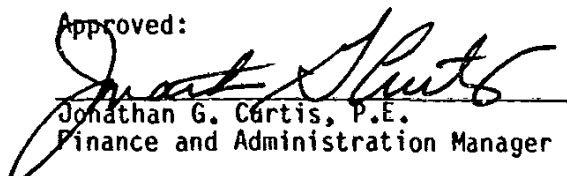
Sincerely yours,

CAMP DRESSER & MCKEE INC.

FOR   
Robert S. Kier, Ph.D.  
Site Manager

  
William F. Buchholz, P.E.  
Region VI Manager

Approved:  
  
David F. Doyle, P.E.  
Technical Operations Manager

Approved:  
  
Jonathan G. Curtis, P.E.  
Finance and Administration Manager

cc: U. Joiner, Contracting Officer, USEPA  
W.M. Kaschak, Project Officer, USEPA

Receipt by USEPA Region VI Acknowledged:      Exception taken

\_\_\_\_\_  
Regional Project Officer      Date      Yes      No

\_\_\_\_\_  
Regional Site Project Officer      Date      Yes      No

Explanation of Exceptions Attached.      Yes      No

Routing of Acknowledgement:

Return original to REM II Site Manager - Robert S. Kier

Copies to:

Region Coordinator - R. Kaltreider  
Project Officer - W.M. Kaschak  
REM II NMPO - J.G. Curtis

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SOUTH CAVALCADE STREET  
HOUSTON, TEXAS  
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

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WORK PLAN MEMORANDUM

FOR

SOUTH CAVALCADE STREET

HOUSTON, TEXAS

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

1.0 INTRODUCTION

This work plan memorandum describes the initial tasks to be performed at the South Cavalcade Street site in accordance with USEPA's Work Assignment No. 47-6L56.

The South Cavalcade Street site (Figure 1) encompasses about 45 acres northeast of the intersection of Collingsworth and Maury Streets in Houston, Texas. This location is about a mile south and west of the intersection of Loop 610 and Route 59. The site is bounded on the east and west by Houston Belt and Terminal railroad lines.

National Lumber and Creosoting Company operated a wood treating facility on the site from 1911 to 1939. Koppers Company purchased National Lumber and Creosoting in 1940 and operated a wood treating and coal tar distillation facility on the site until 1962. Subsequently, three palletized trucking firms developed the site: Meridian Transport Company (Merchants Fast Motorized Lines) in the central part and southwestern corner; Rex King in the eastern corner (Palletized Trucking Inc.); and Transcon Trucking Lines in the northern part of the property on land owned by the Baptist Foundation of Texas. Merchants and Palletized trucking are on Collingsworth Street, Transcon Trucking is on Cavalcade Street, and the central part of the site, owned by Meridian, is vacant (Figure 2). AOF Leasing also operates on property owned by the Baptist Foundation.

In the early 1980's, the Harris County Metropolitan Transit Authority (MTA) became interested in the site for a combined rail yard, shop, and station for a proposed light rail transit system. During routine geotechnical investigations by McClelland Engineers Inc. (MEI) for preliminary design purposes, several localized areas were found to be contaminated with creosote waste products. Camp Dresser & McKee Inc. (CDM) was then retained to perform a contaminant survey and to develop remedial measures that would mitigate the contamination and allow use of the land by MTA. CDM's report, "Cavalcade Contaminant Survey," dated July 11, 1983, and other submittals documented the presence of soil and shallow groundwater contaminated with creosote waste products and heavy metals. Contaminants encountered on the site include chrysene, fluoranthene, arsenic, chromium, lead, and zinc. Failure of

2  
8  
5  
0  
0  
0

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the bond issue that would have financed the light rail system, however, resulted in cessation of CDM's work on the site.

During the course of CDM's work, the Texas Department of Water Resources (TDWR) was apprised of conditions at the site and was provided copies of the data and the CDM report. After failure of the bond issue, TDWR notified current and previous owners that hazardous wastes may exist on the site. Koppers Company, Inc. retained MEI and later Environmental Research and Technology, Inc. (ERT) to perform additional work on the site and has proposed clean up measures. In April, 1984, TDWR recommended the site for the NPL. On October 2, 1984, the site was placed on the NPL, with EPA taking the lead in the RI/FS effort. The site has a Hazardous Ranking System Score of 39. Koppers Company has expressed interest in performing the necessary RI/FS work and has submitted a proposed work plan.

## 2.0 SCOPE OF INITIAL SERVICES

### Task 0. Prepare Work Plan Memorandum

Objective: Prepare a Work Plan Memorandum describing the initial tasks to be performed to prepare the work plan and required project plans and to identify the level of effort, associated costs, and schedule

Data Sources: As listed in Task 1 (review in cursory manner consistent with timing)

Assumptions: USEPA Region VI is handling all aspects of community relations as a separate work assignment

Deliverable: Work Plan Memorandum

### Task 1. Description of Current Situation

#### Subtask 1.1 - Obtain and Evaluate Existing Information

Objective: Develop file of and evaluate existing available information for use in preparing the work plan for the remedial investigation (RI) and feasibility study (FS). If possible, overlays from historical aerial photographs will be prepared

Data Sources:

1. USEPA Region VI files
2. Texas Department of Water Resources files
3. Texas Natural Resources and Information System
4. U.S. Geological Survey
5. Camp Dresser & McKee Inc. "Cavalcade Contamination Survey" and preliminary submittals

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6. Koppers Company, Inc./Environmental Research and Technology, Inc. proposal
7. Koppers Company files
8. McClelland Engineers Inc. report

- Assumptions:
1. USEPA and other public agencies will provide access to their files and furnish required copies
  2. Koppers Company, Inc. will provide all available data and backup
  3. Site data are valid with respect to QA/QC protocols

Deliverable: Interim Site Characterization Report (draft)

Subtask 1.2 - Prepare Compiled Site Plan(s)

Objective: Prepare a site plan(s) showing existing site information to be used in the field to confirm existing information and conditions and to establish the site boundary conditions for input into the limits of survey to be developed in the work plan. A two-dimensional coordinate system will be established for ease of reference; the depth below the ground surface from which a sample is obtained will be referenced as a third dimension.

1. U.S. Geological Survey 7 1/2 minute topographic map(s)
2. University of Texas Bureau of Economic Geology maps
3. CDM Cavalcade Contaminant Survey
4. McClelland Engineers' report
5. Koppers Company, Inc./Environmental Research and Technology, Inc. proposal

Deliverable: Compiled site plan

Subtask 1.3 - Perform Initial Site Characterization

Objective: Field confirm data obtained in Subtask 1.2 and confirm the site specific health and safety requirements

Data Sources: 1. Interim Report information from Subtask 1.1

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2. Compiled site map from Subtask 1.2

Assumptions: Site access furnished by USEPA and current landowners; Meridian Transport Company, Rex King, and the Baptist Foundation

Deliverables: 1. Interim Site Characterization Report (final)  
2. Revised compiled site plan prepared in Subtask 1.2 - revisions will be based on field observations

Task 2. Prepare Project Plans

Objectives: To prepare those project plans necessary for the execution of the work and to insure that the work is conducted in a consistent manner that satisfies the reviewing and using agencies' requirements prior to execution

Data Sources: 1. Information collected from existing site files and the initial site characterization  
2. REM II Guidance Documents  
3. Region VI directives and procedures  
4. State and local directives and procedures  
5. EPA approved REM II Health and Safety Assurance Manual  
6. Quality Assurance Program Plan for Performance and Remedial Response Activities at Uncontrolled Hazardous Waste Sites

Assumptions: 1. The REM II approved program plans will form the basis for the respective site specific plans  
2. Site access and security will be provided by EPA and the current landowners, as listed above  
3. All laboratory analyses will be performed by private laboratories; not the Contract Laboratory Program

Deliverables: 1. Health and Safety Plan

A site-specific health and safety plan will be prepared for USEPA approval, using input from Task 1. The plan will include:

o Personnel protective equipment requirements.

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keyed to generalized site locations and activities

- o Safety equipment inventory
- o Training requirements
- o Medical surveillance program
- o Specific medical procedures, as appropriate
- o Personnel hygiene requirements
- o Contingency plan and emergency procedures
- o Site personnel/activity safety monitoring program
- o Decontamination procedures

The plan will be organized to apply to the RI/FS field work. It is possible that level of protection will vary with the site activity.

## 2. QA/QC Plans

Site-specific QA/QC Plans will be developed in accordance with EPA approved Quality Assurance Program Plan and USEPA's "Interim Guidelines and Specifications for Preparing Quality Assurance Project Management Plans."

Preparation of this document will be tailored to the specific sampling and analysis plan developed in the work plan for this site and will include any laboratory analytical work to be conducted outside of the Contract Laboratory Program (CLP).

## 3. Field Sampling and Analyses Plan

A site-specific sampling and analyses plan based on the findings of the initial investigations phase will be developed to include sampling and analytical requirements for the RI/FS. This plan will be developed in accordance with EPA approved REM II Site Investigations Procedures Manual and be indexed to the site coordinate system. Disposal of excess materials obtained during sampling will be detailed.

## 4. Site Management Plan

A plan will be developed detailing project

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operations at the site, including site access and security, contingency plans for other than site personnel, and the general coordination and operational planning of activities to be performed at the site.

The Health and Safety, QA/QC, Field Sampling and Analysis, and Site Management Plans will be combined into a single Project Operations Plan (POP), which will be a comprehensive reference document detailing all proposed site activities, the health and safety requirements, and QA/QC activities. CDM has prepared POP's for numerous sites with a great deal of success, as all necessary information related to the field data collection program is in a single volume.

#### 5. Data Management Plan

A Data Management Plan will be prepared for internal use to guide the efficient management of the large quantity of data which will result from this assignment.

- o Data recording/gathering format
- o Data file type and location
- o Data file control assignment (by individual) and sign-out procedure
- o Procedures/timing for return of information to file (e.g., no data left at work station overnight)

#### Task 3. Perform EPA Designated Activities

Objectives: Provide EPA with the necessary factual backup and technical support to negotiate with PRPs

Data Sources: Information obtained in Tasks 1, 2, and 4

Deliverables: As requested, including written reviews, and answers to specific questions

#### Task 4. Prepare Work Plan

##### Subtask 4.1 - Prepare Draft Work Plan

Objectives: Prepare a Draft Work Plan for the RI/FS using the results and outputs of Tasks 1, 2, and 3

Data Sources: Outputs and information from Tasks 1, 2, and 3

Assumptions: Work Plan will be one document covering the entire RI/FS

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Deliverables: Consolidated draft work plan including estimated budgets and schedules for all activities. The work plan will include specific, discrete tasks to be performed under each phase of work. The plan will include the items listed below:

- o Introduction
- o Background of site
- o Work Scope
- o Technical approach
- o Site investigations
  - Air quality
  - Soil and geotechnical
  - Groundwater
  - Surface water/sediment
  - Water supply wells in study area
- o Site conceptualization
- o Endangerment assessment
- o Response objectives and criteria
- o Identification of appropriate technologies
- o Development of remedial action alternatives
- o Treatability/laboratory studies, as appropriate
- o Evaluation of alternatives
- o Recommended alternatives
- o Conceptual design
- o Schedule
- o Budget
- o List of deliverables
- o Appendices
  - CPM diagram

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-Auxiliary plans

Subtask 4.2 - Public Meetings

Objectives: To provide a forum to communicate to the public and interested agencies the scope of the final work plan

Information Sources: 1. EPA Region VI

Subtask 4.3 - Prepare Final Work Plan

Objectives: Produce a document to direct the South Cavalcade Street Site RI/FS incorporating appropriate agency, industry, and public comments as directed in writing by EPA

Data Sources: The Draft Work Plan and a written list of comments from EPA

Assumptions: 1. EPA will summarize the agency comments  
2. EPA will direct what comments are to be incorporated into the final document

Deliverables: Final Work Plan

Task 5. Technical and Financial Management

Objective: 1. Prepare and submit monthly technical and financial progress reports  
2. Attend progress meetings  
3. Conduct work effort quality control and QA audits  
4. Implement document control procedures and project schedule controls

Data Sources: 1. Work Plan Memorandum  
2. Output from Tasks 1-4  
3. Management information system established for the REM II Contract (REMIS)

Assumptions: Monthly progress reports will be prepared during the initial task period in conformance with the standard monthly report format

Deliverables: Monthly Progress Reports

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### 3.0 BUDGET

The costs associated with the initial tasks, as described in this Work Plan Memorandum, are presented in Attachments A and B. Attachment A presents labor hours and costs, and Attachment B presents expenses and other direct costs (ODC's). These costs are in accordance with our approved labor categories and reflect our understanding of the requirements of this work assignment.

### 4.0 SCHEDULE

The Schedule of Activities by task and subtask is presented in Attachment C. As shown, we estimate that the Final Work Plan will be completed by the week ending April 6th, 1985. CDM will be attempting to shorten that schedule to enable us to initiate field activities as soon as possible.

The Schedule of Deliverables is presented in Attachment D and shows distributions and approval dates. We have not included distribution to any identified potential responsible parties; we look to your guidance in these areas.

### 5.0 KEY STAFF

1. Robert S. Kier, Ph.D., of CDM will be the Site Manager for the South Cavalcade Street site assignment. His resume is included as Attachment E.
2. Mr. William F. Buchholz, P.E. of CDM is the REM II Region VI Manager.
3. Camp Dresser & McKee will provide direction and input on health and safety, quality assurance, and on specific tasks as required.
4. Clement Associates will perform endangerment assessment.
5. C.C. Johnson and Associates will provide input on a task specific basis.

**ATTACHMENT A**

Site Number: 143

Phase: WP1

Site Manager: R.S. Kier

Date: 12-31-84

Site Name: SOUTH CAVALCADE

NA Code: 47-6LS6

SSAN:

TASK ELEMENT	Professional 4 78.36 \$/Hr.	Professional 3 47.72 \$/Hr.	Professional 2 36.63 \$/Hr.	Professional 1 27.42 \$/Hr.	Technical 2 35.11 \$/Hr.	Technical 1 20.50 \$/Hr.	TOTAL TECHNICAL LOE	Clerical 3 29.79 \$/Hr.	Clerical 2 22.15 \$/Hr.	Clerical 1 16.21 \$/Hr.	Total
	Hours : \$	Hours : \$	Hours : \$	Hours : \$	Hours : \$	Hours : \$	Hours : \$	Hours : \$	Hours : \$	Hours : \$	Hours : \$
6.0 WORK PLAN MEMO	14 : 1097	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	14 : 1097	1 : 30	0 : 0	0 : 0	15 : 1127
11.1 DESCRIBE CURRENT SITUATION	9 : 705	17 : 811	0 : 0	7 : 192	9 : 316	0 : 0	42 : 2025	1 : 30	2 : 44	1 : 16	46 : 2115
12.1 PREPARE PROJECT PLANS	45 : 3527	65 : 3102	14 : 513	22 : 603	22 : 772	12 : 246	180 : 8763	5 : 149	9 : 199	4 : 65	198 : 9177
13.1 PERFORM EPA DESIGNATED ACT	54 : 4233	22 : 1050	52 : 1905	0 : 0	0 : 0	0 : 0	128 : 7187	3 : 89	6 : 133	3 : 49	140 : 7458
14.1 PREPARE WORK PLAN	45 : 3527	63 : 3006	0 : 0	23 : 603	20 : 792	10 : 205	160 : 8044	4 : 119	8 : 177	4 : 65	176 : 8405
15.1 TECHNICAL & FINANCIAL REPORT	9 : 705	47 : 2243	56 : 2051	0 : 0	0 : 0	0 : 0	112 : 5000	3 : 89	6 : 133	2 : 32	123 : 5254
	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
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	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
TOTAL	176 : 13795	214 : 10212	122 : 4469	51 : 1398	51 : 1791	22 : 451	636 : 32116	17 : 506	31 : 687	14 : 227	698 : 33536

CJS:TASK.LAB

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ATTACHMENT 2  
Page 1 of 2

Site Number: 143

Site Manager: R.S. Kier

Site Name: South Cavalcade

SEAN: \_\_\_\_\_

Phase: MPI

Date: 12/31/84

WA Code: 47-6L56

	Equipment \$52.00 /day		Per Diem \$90.00 /day		Transportation	Sub-Pool	G & A 0.0%	Total
TASK	Days	\$	Days	\$	\$	\$	\$	\$
TASK 1	:	0	4	360	400		0	760
TASK 2	3	156	2	180			0	336
TASK 3	:	0	:	0	400		0	400
TASK 4	:	0	:	0			0	0
TASK 5	:	0	:	0			0	0
	:	0	:	0			0	0
	:	0	:	0			0	0
	:	0	:	0			0	0
	:	0	:	0			0	0
	:	0	:	0			0	0
	:	0	:	0			0	0
	:	0	:	0			0	0
TOTAL	3	156	6	540	900	0	0	1,496

SOC.EXP

\* Subcontractor pool excluded from G&A computation

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ATTACHMENT B  
Page 2 of 2

Site Number: 143

Site Manager: R.S. Kier

Site Name: South Cavalcade

SSAN: \_\_\_\_\_

Phase: WP1

Date: 12/31/84

WA Code: WA-47-6L56

	Xerox	Blue- prints	Mail/ Courier	Supplies	Tele- phone	Computer		G & A	TOTAL
TASK	\$	\$	\$	\$	\$	\$	\$	\$	\$
TASK 1	100		25		50				175
TASK 2	100	100	50	50	100	100			500
TASK 3	300	50	50	500	100	500			1500
TASK 4	500	100	100		100				800
TASK 5	500	50	100		50				700
									0
									0
									0
									0
									0
									0
									0
TOTAL	1500	300	325	550	400	600	0	0	3675

A:500.000

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# SCHEDULE OF ACTIVITIES

ATTACHMENT C

## SOUTH CAVALCADE SITE

TASK		DECEMBER			JANUARY				FEBRUARY				MARCH					APR.
WEEK ENDING		15	22	29	5	12	19	26	2	9	16	23	2	9	16	23	30	5
0. WORK PLAN MEMORANDUM																		
1. DESCRIPTION OF CURRENT SITUATION																		
1.1 EXISTING INFORMATION																		
1.2 PREPARE SITE PLAN																		
1.3 SITE CHARACTERIZATION																		
2. PREPARE PROJECT PLANS																		
3. PERFORM EPA ACTIVITIES PRP NEGOTIATIONS		AS REQUESTED BY EPA AND CONTINUING BEYOND COMPLETION OF FINAL WORK PLAN																
4. PREPARE WORK PLAN																		
4.1 DRAFT WORK PLAN																		
4.2 PUBLIC MEETING																		
4.3 FINAL WORK PLAN																		
5. COORDINATION AND MANAGEMENT																		
MONTHLY REPORT																		

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# REVIEW AND DELIVERABLE SCHEDULE

ATTACHMENT D

SITE: S. Cavalcade WA NO: 47-6L56 WA ISSUED: 12-11-84

REGION: REM VI REGIONAL MANAGER: Buchholz SITE MANAGER: R.S. Kier, Ph.D.

TASK	REM II APPROVAL					QUALITY CONTROL REVIEW		DELIVERABLE DUE TO EPA	EPA REVIEW COMPLETION DATES					OTHER AGENCY REVIEW COMPLETION DATES			
	RM	HSM	TOM	FAM		ACTIVITY	DATE	DATE	RO	CO	RPO	RSPO					
Work Plan Memorandum	12/25		12/28	12/28		A1a,c,d	12/28	1/2	1/9	1/9	1/9	1/9					
Existing Information Report	1/15					A2	1/16	1/18			1/25	1/25					
Site Plan	1/23					A2	1/23	1/25			2/1	2/1					
Site Characterization	1/30	1/30				A1a	1/30	2/1	2/8	2/8	2/8	2/8					
Project Operations Plan	2/14		2/14			A3*	2/13	2/15	3/1	3/1	3/1	3/1					
Draft Work Plan	2/19	2/21	2/21	2/21		B1*	2/15	2/22	3/22	3/22	3/22	3/22					
Final Work Plan	3/29	4/3	4/3	4/3		A1a	3/29	4/5	4/12	4/12	4/12	4/12					

\* QUALITY ASSURANCE COORDINATOR REVIEW

000595

ATTACHMENT D

QCP Activities Legend

A. Single Person Review and Signoff

1. Supervisor

- a. Regional Manager
- b. Health & Safety Manager
- c. Technical Operations Manager
- d. Finance & Administration Director

2. Peer Review and Signoff\*

3. Technical Expert Review & Signoff\*

\*(Identify individual, provide resume and schedule time)

B. Committee Review and Signoff

1. Assembled committee

2. Blind committee

1. Signoff consists of approval signature block on the transmittal page of the deliverable signed and dated by the responsible party(ies) or committee chairman prior to electronic submittal to the NPMO for approval for release to the EPA region.

000596

ATTACHMENT E

ROBERT S. KIER

Senior Scientist  
Camp Dresser & McKee

QUALIFICATIONS SUMMARY

Dr. Kier is a senior scientist with CDM. During the time he has been associated with CDM he has participated, or managed approximately thirty projects. The size of the projects has ranged from small, site specific waste management studies to large, multistate water supply projects. Most of the studies were multidisciplinary, involving integration of ground and surface water information.

EXPERIENCE

Dr. Kier's experience is in geohydrology, geology, engineering geology and waste disposal. Several projects in which he has participated or for which he was responsible have dealt with numerical modeling of local and regional groundwater flow systems where surface/groundwater interactions presented problems. Other projects dealt with surface and groundwater quality and the transport of toxic, hazardous, and nuclear wastes. One project involved ascertaining the fate of contaminated groundwater which had seeped from a disposal pond, assessing the resulting company liability, and suggesting and testing remedial measures using a three-dimensional groundwater model. Three projects included determination of water requirements, water availability and wastewater treatment approaches for a variety of nonconventional energy sources in several western states. Several other projects involved analysis of regional groundwater hydrology, available water supplies, and the potential for salt water intrusion. Dr. Kier recently completed a groundwater management study for Texas Tech University which included determination of the availability and quality of the local groundwater and the potential for various uses such as domestic, industrial, and irrigation supplies. Dr. Kier also recently participated in evaluating the ability of a multiaquifer system (confined and unconfined) to supply anticipated municipal water requirements. In the state of Indiana, Dr. Kier was responsible for ascertaining the hydrologic and water quality impacts of groundwater withdrawals for irrigation purposes. In Texas, Dr. Kier has participated in the evaluation of dam sites and the dam design and he frequently is responsible for designing foundation exploration programs and interpreting foundation conditions for major buildings, pipelines and dams. Dr. Kier has provided expert testimony in agency hearings and courts of law.

EDUCATION

B.A., Geology, Franklin and Marshall College,  
Lancaster, Pennsylvania, 1965  
M.S., Geology, Franklin and Marshall College,  
Lancaster, Pennsylvania, 1967  
Ph.D., Geology, The University of Texas at Austin,  
1972

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CERTIFICATIONS

American Institute of Professional Geologists,  
Certified Professional Geological Scientist,  
(CPGS) No. 6358  
State of Indiana, Certified Professional Geologist,  
(CPG) No. 534

HONORS

Phi Kappa Phi  
Sigma Gamma Epsilon

PROFESSIONAL  
HISTORY

February 1979  
to present

Senior Scientist, Camp Dresser & McKee

Participated in the Six-State High Plains Ogalla Aquifer Study in the areas of geology, groundwater hydrology, environmental impacts, and interbasin transfer.

Project manager for a study to determine leakage rates, quantities and fate of mine water which had seeped from a disposal pond in South Texas, ascertain company liability and suggest and test groundwater recovery measures using a two-layer groundwater model.

Project manager for groundwater quality assessment in East Texas. Designed monitor well installations and sampling program to determine extent of migration of hazardous contaminants which had seeped from a disposal pond.

Project manager for a water management study at Texas Tech University. Determined reasons for rising groundwater levels beneath Lubbock, Texas, using a large finite-element groundwater model, developed alternatives to mitigate the impact and beneficially use the groundwater.

Project manager for developing a conceptual model for transport radionuclides from a salt dome repository.

Project manager for ascertaining the availability of surface and groundwater for development of non-conventional energy, e.g. coal gasification, low head hydro, biomass conversion, geothermal--in Texas, New Mexico, and Colorado. Examined total water resources and waste disposal requirements.

Designed monitor well program for two hazardous waste sites in Houston, Texas. One of the sites is now ranked on The National Priority List.

000598

Investigated the origin and nature of springflow from the Edwards Aquifer in Concho and Tom Green Counties.

Designed monitor well program at dedicated land disposal site in North Texas.

Supervised foundation exploration and dam design for commercial development in Austin, Texas.

Evaluated geohydrology, foundation conditions, and leakage potential for proposed dam in West Texas.

Instructor for upper division course in Geological Hazards, Department of Geological Sciences, The University of Texas at Austin

1971 to 1979

Research Scientist, Bureau of Economic Geology, The University of Texas at Austin.

While at the Bureau of Economic Geology, Dr. Kier's specialties included resource use and management; multi-disciplinary research concerned with prudent use of natural resources; environmental geology; and Mississippian, Pennsylvanian, and Permian stratigraphy in Central and North Texas.

Major projects on which he worked are:

- Regional stratigraphy and geologic mapping of the Brownwood and Wichita Falls and Lawton 1° x 2° sheets of the Geologic Atlas of Texas.
- Evaluation of the favorability for uranium in the Wichita Falls Quadrangle.
- Land Resources of Texas--an inventory and map of the land resources of Texas, based on natural physical, biological, and chemical characteristics and man-made and modified attributes.
- Methodology to Evaluate Alternative Management Policies: Application in the Texas Coastal Zone--a multidisciplinary effort involving state and university personnel to develop a methodology that aids in predicting environmental and economic impacts of alternative public policies prior to implementation.

In the second and third projects, Dr. Kier served as principal investigator and project director, respectively. In the multidisciplinary study, Dr. Kier was

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project coordinator and acting project director while the project director was on leave.

TECHNICAL  
SOCIETIES

American Association of Petroleum Geologists  
Society of Economic Paleontologists and Mineralogists  
American Association for the Advancement of Science  
Austin Geological Society  
Gulf Coast Section of SEPM

COMMITTEE  
ASSIGNMENTS

Governmental Committees

Land Resource Management Advisory Committee, Flood  
Control and Flood Plain Management Subcommittee,  
1973  
Technical Committee, Central Texas Resource Conservation  
and Development Area, 1975-1978

Professional Responsibilities

Chairman, Public Relations Committee, Austin,  
Geological Society, 1975-1976  
Editorial Committee, Gulf Coast Association of  
Geological Societies Transactions, v. 27, 1977  
Field Trip Committee, Gulf Coast Association of  
Geological Societies, 27th Annual Meeting, Austin,  
Texas, 1977  
Austin Representative, Gulf Coast Association of  
Geological Societies, 28th Annual Meeting, New  
Orleans, Louisiana, 1978  
Field Trip Leader, West Texas Geological Society Annual  
Field Trip, October 19-21, 1980  
Business Representative, Gulf Coast Section of the  
Society of Economic Paleontologists and  
Mineralogists, 1981-84  
Vice President, Austin Geological Society, 1980-81  
President, Austin Geological Society, 1981-82  
Field Trip Leader, Houston Geological Society  
Annual Field Trip, October 10-11, 1981  
Editor, Gulf Coast Section of the Society of  
Economic Paleontologists and Mineralogists,  
1984 Annual Convention

PUBLICATIONS

Dr. Kier has contributed more than twenty-five technical papers to the professional literature on geology and related natural resources. In addition, he has authored or co-authored more than thirty-five technical reports for the various projects in which he has been involved at CDM. Topics include disposal of toxic and hazardous

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ROBERT S. KIER  
Page 5

wastes, disposal of nuclear wastes, water requirements and availability for synfuel development, characterization of regional groundwater flow systems, groundwater management, salt water intrusion, and the potential for groundwater contamination related to waste disposal operations.

000601

ATTACHMENT F

MEMORANDUM

TO: D.F. Doyle  
Manager of Technical Operations  
Camp Dresser & McKee Inc.  
One Center Plaza  
Boston, MA 02108

FROM: R.S. Kier

DATE: December 19, 1984

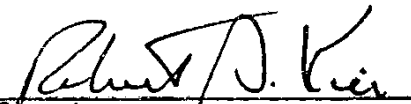
PROJECT: EPA CONTRACT NO. 68-01-6939

DOCUMENT NO.: 143-WP1-WM-APLD-1

SUBJECT: Staff Conflict of Interest Declaration  
Site: 143  
Work Assignment No.: 47-6L56

ACTION: Immediate Response

I have reviewed the above work assignment for the US EPA Contract 68-01-6939, Remedial Response Activities at Uncontrolled Hazardous Waste Sites. Based upon this review and my understanding of the legal requirements of this work, I certify that I have no known conflict of interest associated with this assignment based upon the known potential responsible parties or my past work experience with this site, if any. Also, I understand my professional obligation to inform any staff working at my direction on this assignment of the conflict of interest requirements and ensure that such staff have no such conflicts.

  
Signature

Robert S. Kier  
Name

cc: J.G. Curtis  
Camp Dresser & McKee Inc.  
7630 Little River Turnpike  
Suite 500  
Annandale, VA 22003

AK1-22

000602

ATTACHMENT F

MEMORANDUM

TO: D.F. Doyle  
Manager of Technical Operations  
Camp Dresser & McKee Inc.  
One Center Plaza  
Boston, MA 02108

FROM: William F. Buchholz

DATE: December 31, 1984

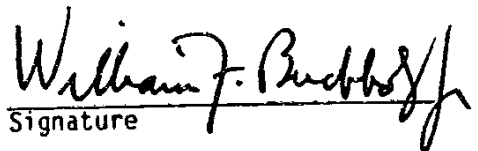
PROJECT: EPA CONTRACT NO. 68-01-6939

DOCUMENT NO.: 142-WP1-WM-APLC-1

SUBJECT: Staff Conflict of Interest Declaration  
Site: 142  
Work Assignment No.: 46-6L79

ACTION: Immediate Response

I have reviewed the above work assignment for the US EPA Contract No. 68-01-6939, Remedial Response Activities at Uncontrolled Hazardous Waste Sites. Based upon this review and my understanding of the legal requirements of this work, I certify that I have no known conflict of interest associated with this assignment based upon the known potential responsible parties or my past work experience with this site, if any. Also, I understand my professional obligation to inform any staff working at my direction on this assignment of the conflict of interest requirements and ensure that such staff have no such conflicts.

  
Signature

William F. Buchholz  
Name

cc: J.G. Curtis  
Camp Dresser & McKee Inc.  
7630 Little River Turnpike  
Suite 500  
Annandale, VA 22003

AK1-27

000603

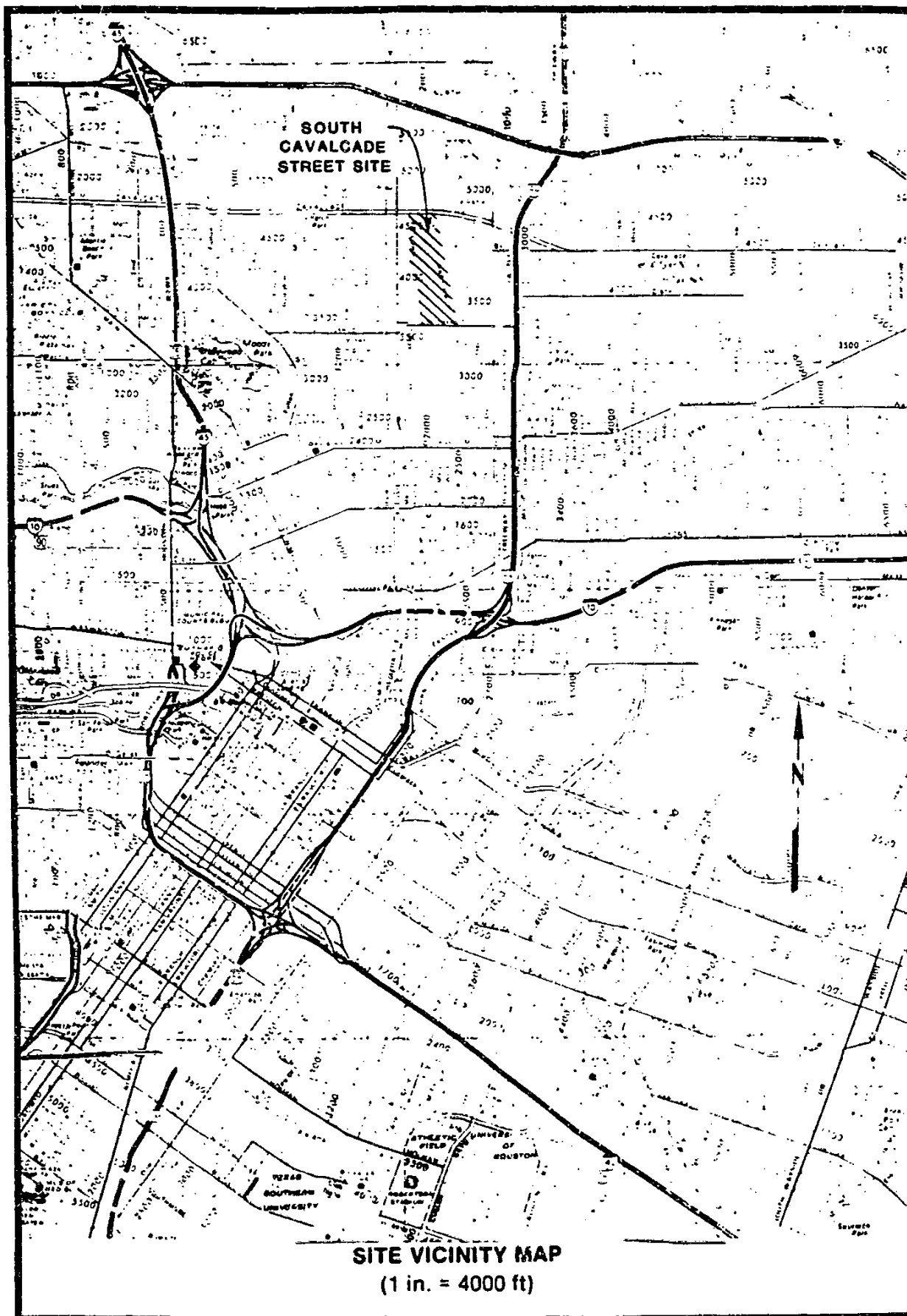


FIGURE 1

000604

# CURRENT PROPERTY OWNERS SOUTH CAVALCADE STREET SITE

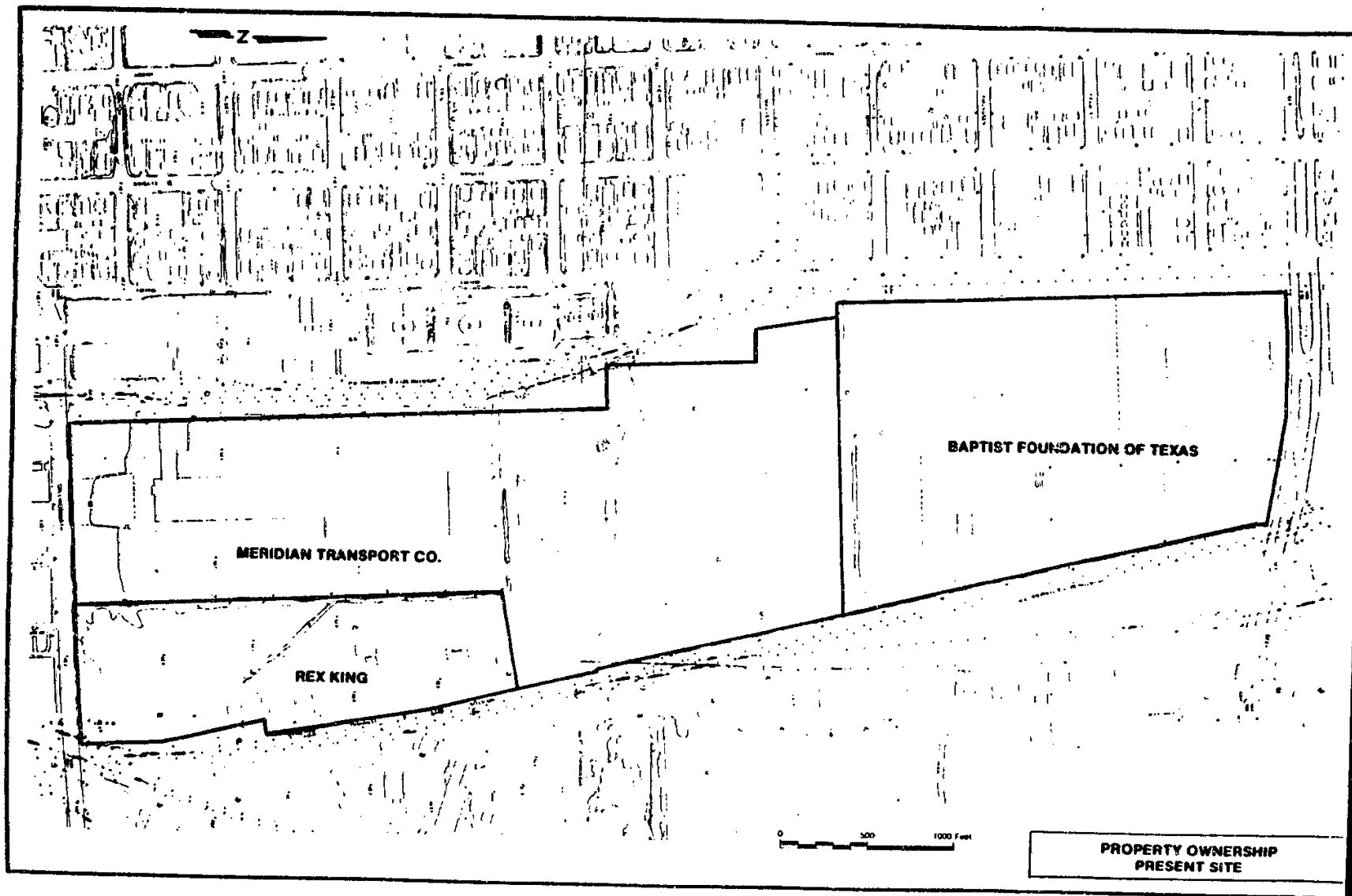


FIGURE 200605

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